

Appl. No. : 10/716,116
Filed : November 18, 2003

AMENDMENTS TO THE CLAIMS

Claims 8-19 are currently pending. Claims 1-7 are canceled. Please amend Claims 8 and 9.

1.-7. (Canceled)

8. (Currently amended) A system to remove a first material located on a top surface of a workpiece, the system comprising:

a pad positioned proximate to the workpiece so that a front surface of the pad contacts an exposed surface of the first material, at least a portion of the front surface of the pad comprising a second material prior to contact between the front surface of the pad and the first material;

means for mechanically moving the front surface of the pad against the exposed surface of the first material to initiate a chemical reaction between the first material and the second material, the chemical reaction yielding a reaction product; and

a chemical solution to remove the reaction product, the reaction product being soluble into the chemical solution and the first material and second material not being substantially soluble into the chemical solution.

9. (Currently amended) An apparatus for removing material on a surface of a workpiece comprising:

a pad positioned proximate to the workpiece having ~~at least~~ a first material configured to react with the material on the surface of the workpiece, wherein the first material is on at least a portion of a surface of the pad prior to contact between the surface of the pad and the surface of the workpiece;

a workpiece holder configured to hold the workpiece and produce relative motion between the pad and the workpiece to create a reaction product from a chemical reaction between the first material and the material on the surface of the workpiece; and

a solution configured to contact the reaction product for removal of the reaction product.

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10. (Previously presented) The apparatus of claim 9, wherein the pad includes abrasives configured to abrade the material on the surface of the workpiece.

11. (Previously presented) The apparatus of claim 10, wherein the pad removes the reaction products.

12. (Previously presented) The apparatus of claim 10, wherein the pad is configured with strips of the first material and strips of abrasive material.

13. (Previously presented) The apparatus of claim 9, wherein the material on the surface of the workpiece is copper and the first material oxidizes the copper.

14. (Previously presented) The apparatus of claim 9, wherein the workpiece holder vibrates without contacting the pad.

15. (Previously presented) The apparatus of claim 9, wherein the workpiece holder is configured to rotate, move vertically, or laterally with respect to the pad.

16. (Previously presented) The apparatus of claim 15, wherein the workpiece holder maintains a predetermined distance from the pad to automatically stop the chemical reaction between the first material and the material on the surface of the workpiece.

17. (Previously presented) The apparatus of claim 9 further comprising a second pad configured to polish the reaction product and the material on the surface of the workpiece and to planarize the surface.

18. (Previously presented) The apparatus of claim 9, wherein the solution dissolves the reaction product.

19. (Previously presented) The apparatus of claim 9, wherein the solution includes another agent.